

1.執行 readelf -d /usr/bin/ls

```
myp@SP: ~/busybox
myp@SP:~/busybox$ readelf -d /usr/bin/ls
Dynamic section at offset 0x21a58 contains 28 entries:
  Tag                Type              Name/Value
0x0000000000000001 (NEEDED)          Shared library: [libselinux.so.1]
0x0000000000000001 (NEEDED)          Shared library: [libc.so.6]
0x000000000000000c (INIT)            0x4000
0x000000000000000d (FINI)            0x17574
0x0000000000000019 (INIT_ARRAY)      0x22010
0x000000000000001b (INIT_ARRAYSZ)      8 (bytes)
0x000000000000001a (FINI_ARRAY)      0x22018
0x000000000000001c (FINI_ARRAYSZ)      8 (bytes)
0x000000006ffffef5 (GNU_HASH)         0x3a0
0x0000000000000005 (STRTAB)           0x1190
0x0000000000000006 (SYMTAB)           0x488
0x000000000000000a (STRSZ)            1612 (bytes)
0x000000000000000b (SYMENT)           24 (bytes)
0x0000000000000015 (DEBUG)            0x0
0x0000000000000003 (PLTGOT)           0x22c58
0x0000000000000002 (PLTRELSZ)         2544 (bytes)
0x0000000000000014 (PLTREL)           RELA
0x0000000000000017 (JMPREL)           0x2cb8
0x0000000000000007 (RELA)             0x1968
0x0000000000000008 (RELASZ)           4944 (bytes)
```

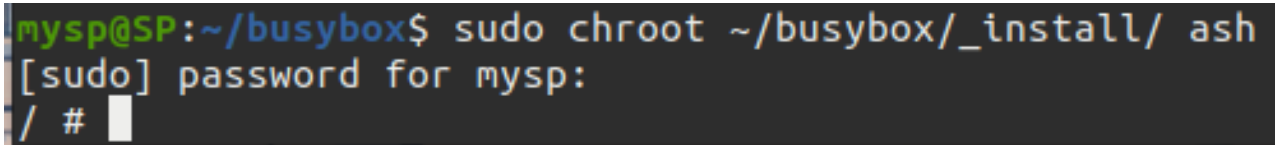
執行readelf -d~ /busybox/_install/bin/busybox

```
myp@SP:~/busybox$ readelf -d ~/busybox/_install/bin/busybox
Dynamic section at offset 0x105d50 contains 28 entries:
  Tag                Type              Name/Value
0x0000000000000001 (NEEDED)          Shared library: [libm.so.6]
0x0000000000000001 (NEEDED)          Shared library: [libresolv.so.2]
0x0000000000000001 (NEEDED)          Shared library: [libc.so.6]
0x000000000000000c (INIT)            0xe000
0x000000000000000d (FINI)            0xd94ec
0x0000000000000019 (INIT_ARRAY)      0x103db0
0x000000000000001b (INIT_ARRAYSZ)      8 (bytes)
0x000000000000001a (FINI_ARRAY)      0x103db8
0x000000000000001c (FINI_ARRAYSZ)      8 (bytes)
0x000000006ffffef5 (GNU_HASH)         0x3a0
0x0000000000000005 (STRTAB)           0x2a88
0x0000000000000006 (SYMTAB)           0x460
0x000000000000000a (STRSZ)            3852 (bytes)
0x000000000000000b (SYMENT)           24 (bytes)
0x0000000000000015 (DEBUG)            0x0
0x0000000000000003 (PLTGOT)           0x107000
0x0000000000000002 (PLTRELSZ)         9000 (bytes)
0x0000000000000014 (PLTREL)           RELA
0x0000000000000017 (JMPREL)           0xb858
0x0000000000000007 (RELA)             0x3e18
0x0000000000000008 (RELASZ)           31296 (bytes)
0x0000000000000009 (RELAENT)          24 (bytes)
0x000000006fffffb (FLAGS_1)          Flags: PIE
0x000000006fffffe (VERNEED)          0x3cc8
0x000000006ffffff (VERNEEDNUM)        3
0x000000006fffff0 (VERSYM)            0x3994
0x000000006fffff9 (RELACOUNT)         1275
0x0000000000000000 (NULL)             0x0
```

圈起來的部分(Shared library)為所需動態鏈結函式庫

2.請給一張螢幕快照，顯示

『\$ sudo chroot ~/busybox/_install/ ash』的執行結果

A terminal window with a dark background. The prompt is 'mysp@SP:~/busybox\$'. The command 'sudo chroot ~/busybox/_install/ ash' has been entered. The next line shows '[sudo] password for mysp:' followed by a cursor. The third line shows '/ #' followed by a cursor, indicating a successful chroot operation.

```
mysp@SP:~/busybox$ sudo chroot ~/busybox/_install/ ash
[sudo] password for mysp:
/ #
```

3.請參考 <https://zh.wikipedia.org/wiki/BusyBox>，
以 50 個左右的字說明 busybox 的主要用途

Busybox 整合各種系統工具程式(ex:ls,mkdir,mount,ifconfig...) 成為一個單一執行檔，大大縮減了系統使用容量。
主要用於嵌入式系統上。